

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A device ~~to remove or recover by-products formed during~~ for processing of a gaseous effluent containing at least hydrogen sulfide (H₂S) and sulfur dioxide (SO₂) wherein a solvent and a catalyst are used, said device comprising:

at least one contactor reactor, ~~at least one separation zone,~~

several lines for delivery of at least the gas to be processed and of a fluid comprising a solvent and a catalyst,

several lines for extraction of at least a cleaned gas and of a fluid containing at least solvent and by-products resulting from degradation of the catalyst,

at least one separation zone operably connected to the contactor reactor, a liquid sulfur being separated from a liquid solvent in the separation zone,

extraction means for extracting an essentially liquid fraction F comprising at least solid by-products, ~~said extraction means being connected to~~ from a layer of ~~solid by-products situated between the liquid solvent and the liquid sulfur~~ in the separation zone, and

at least one zone for processing ~~said~~ the liquid fraction F.

2. (original) A device as claimed in claim 1, characterized in that said separation zone and said extraction means are situated in the lower part of said contactor reactor.

3. (currently amended) A device ~~as claimed in claim 1, characterized in that~~ to remove or recover by-products formed during processing of a gaseous effluent containing at least hydrogen sulfide (H₂S) and sulfur dioxide (SO₂) wherein a solvent and a catalyst are used, said device comprising at least one contactor reactor, at least one separation zone, several lines for delivery of at least the gas to be processed and of a fluid comprising a solvent and a catalyst, lines for extraction of at least a cleaned gas and of a fluid containing at least solvent and by-products, means for extracting an essentially liquid fraction F comprising at least solid by-products, said extraction means being connected to a layer of solid by-products in the separation zone, and at least one zone for processing said fraction F, and wherein said extraction means are arranged on a line connecting said contactor reactor and said separation zone.

4. (original) A device as claimed in claim 1, characterized in that processing zone comprises at least one of the means for producing at least one stream essentially comprising solvent and at least one stream comprising most of the by-products formed selected from the group consisting of:

demixing means,
filtering means, and
capture means.

5. (currently amended) A device as claimed in claim 1, ~~characterized in that it comprises at least~~ further comprising means (C_{N2}, V₂) for controlling the a thickness and/or means (C_{N1}, V₁) for controlling the position of the layer of by-products, or

~~control means (V₁, V₂)~~ situated between the liquid solvent and the liquid sulfur in the separation zone.

6. (currently amended) A device as claimed in claim 1, ~~characterized in that it comprises~~ further comprising a line allowing to recycle at least part of a stream F₂ essentially consisting of solvent and/or part of the solvent separated from the liquid sulfur to the contactor reactor.

7. (currently amended) A device as claimed in claim ~~1~~ 6, ~~characterized in that it comprises~~ further comprising means for sulfur desaturation of said part of stream F₂ and/or of said part of the solvent separated from the liquid sulfur.

8. (original) A device as claimed in claim 1, characterized in that said contactor reactor is selected from the group consisting of a reactor with random or stacked packing, a static mixer SMV, an impactor, a hydro-ejector, an atomizer, and a wire contactor.

9. (original) A device as claimed in claim 1, wherein said device is connected to a Claus plant processing H₂S from natural gas scrubbing operation or crude oil refining operations, and said gaseous effluent is an effluent of the Claus plant.